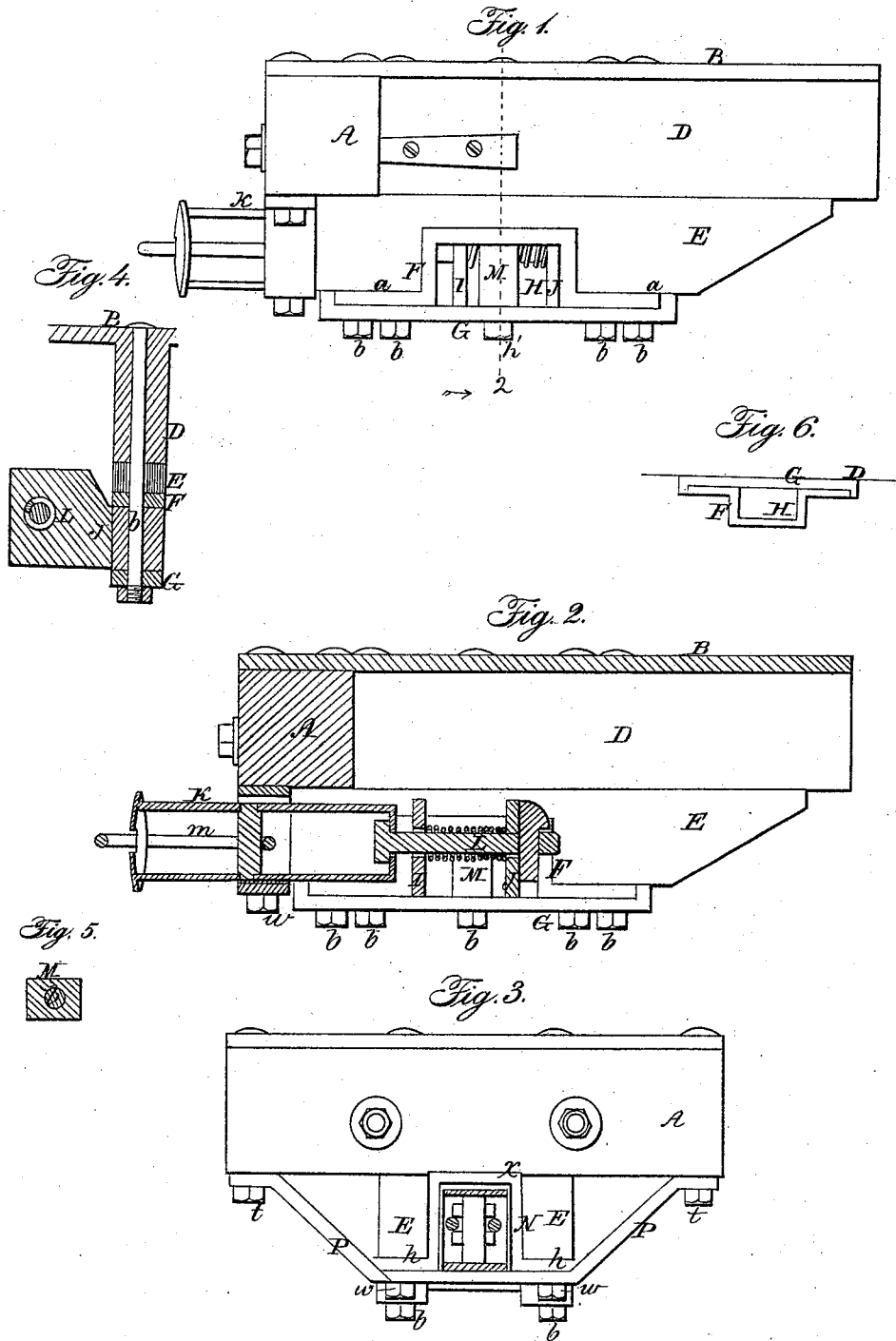


J. P. LAIRD.

Car Bumper.

No. 46,248.

Patented Feb. 7, 1865.



Witnesses:

Wm. Albert Heel
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Inventor:

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UNITED STATES PATENT OFFICE,

JOHN P. LAIRD, OF ALTOONA, PENNSYLVANIA.

IMPROVEMENT IN CAR-BUMPER ATTACHMENTS.

Specification forming part of Letters Patent No. 46,248, dated February 7, 1865.

To all whom it may concern:

Be it known that I, JOHN P. LAIRD, of Altoona, Blair county, Pennsylvania, have invented an Improvement in Railway-Cars; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to improvements in the guides for the bumper and bumper-plates of railway-cars; and it consists in so embedding the said guides in packing-blocks of wood that they can be made much lighter and less expensive than ordinary guides, and at the same time are more capable of resisting the violent strains and shocks to which they are subjected.

My invention further consists of the stopping-block described hereinafter for limiting and regulating the limit of the bumper-plates to suit different styles of springs.

In order to enable others skilled in the art to make and use my invention, I will now proceed to describe the manner of constructing the same.

On reference to the accompanying drawings, which form a part of this specification, Figure 1 is a view of sufficient of a railway-car to illustrate my improvements; Fig. 2, a sectional view; Fig. 3, an end view; Fig. 4, a vertical section, on the line 1 2, Fig. 1; Fig. 5, a section of the stopping-blocks, and Fig. 6 a diagram illustrating the advantages of my invention.

Similar letters refer to similar parts throughout the several views.

A represents a portion of the end or bumper beam, and B part of a platform of a railway-car, D D being two beams secured to the bumper-beam forming part of the car-frame and arranged at a suitable distance apart from each other. To the under side of each of the beams D, as well as to the bumper-beam A, is secured a packing-block, E, of wood, and into each of these blocks is let the projecting portion of the guide-plate F, the flanges *a* of which fit against the under side of the said packing-block. Beneath the guide-plate is a plate, G, lips on the ends of which overlap the ends of the said guide-plate. Bolts *b b b b* serve to bind the two plates G and F and

the block E to the frame of the car. Two openings, H, are thus formed, one by the plates G and F, secured to one of the beams D, and the other by similar plates secured to the other beam D, and into these openings the ends of the plates I and J so fit as to slide to and fro freely. These plates I and J, the bumper K, pin L, and link *m*, as well as the spring or springs, may be of the usual construction, the manner in which they operate being too well known to railway-engineers to need description. A stopping-block, M, the transverse section of which presents an oblong figure, (Fig. 5,) extends vertically across each of the openings H, and one of the bolts *b* passes through each block, the object of which is to limit the rearward movement of the plate I, and consequently that of the bumper K.

It is important that means should be afforded of limiting the movement of the plates I and J and of regulating the extent of this movement to suit different styles of springs. This can be done by the blocks M, which, after loosening the nuts of the bolts which pass through them, can be turned so as to occupy more or less of the openings H.

The bumper passes through and is guided by an opening formed by the stirrup N and stay-bar P, the stirrup being constructed and adapted to the frame of the car in the peculiar manner best observed on reference to Fig. 3. A portion of this stirrup is let into the under side of the bumper-beam A at *x*, and fits snugly between the blocks E E, the ends of which are flush with the face of the bumper-beam. The flanges *h* of the stirrup fit, one against the under side of one of these beams E, and the other against the under side of the other beam, and against the under side of these flanges bears the straight portion of the stay-bar P, which is secured to the under side of the bumper-beam by bolts *t*, and bolts *w* serve to secure the stay-bar P, stirrup N, and blocks E to the bumper-beam.

It is well known that the guides for the bumpers, as well as those for the plates I and J in railway-cars are subjected to the most violent strains and shocks, and that, in order to resist these, massive and strong guides of cast-iron or heavy and costly wrought-iron have been heretofore used.

The diagram, Fig. 6, will serve to illustrate the ordinary mode of making and securing these guides and to show the advantages of my improvement. The plate G fits directly against the underside of each of the beams D, and the guide-plate H is fitted to the plate F, and the whole secured by suitable bolts. In this case the whole of the guide-plate H is exposed and liable to fracture from sudden strains or shocks. It is consequently necessary to make it very massive and expensive.

In my improvement the guide-plate is so embedded in the timber-block E that it can be made very light, the strains and shocks being resisted partly by the plate itself and partly by the timber. By this judicious combination of the two materials both additional strength and security is obtained and expense in construction reduced. The same remarks will apply to the stirrup, which, as ordinarily arranged, is exposed, but which, as seen in Fig. 3, is embraced by the beams E E and

confined between the bumper-beam A and tie-bar P.

I claim as my invention and desire to secure by Letters Patent—

1. The guide-plate, F, embedded in the wooden blocks E E, and secured to the beams of the car, all substantially as and for the purpose herein set forth.

2. The stirrup N, confined between the beams E E, and secured to the bumper-beam, substantially as specified.

3. The adjustable stopping-blocks M, adapted to the plates F and G and to a bolt, b, which passes through the same, all substantially as set forth, for the purpose specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN P. LAIRD.

Witnesses:

HENRY HOWTON,
JOHN WHITE.